88 are plants, and about one-third are reported as common. Like that of the Oder, the Elbe plankton is characterized by the predominance of diatoms, especially in spring and autumn. In the main stream the phytoplankton greatly exceeds the zoöplankton in volume and variety and plays a very important part in the self-purification of the river water. Access of sewage does not have a deleterious effect upon the plankton. Dr. Schorler does not regard the Elbe plankton as autonomous, but dependent for its maintenance upon accessions from adjacent bays and lagoons, and from tributary waters. The littoral fauna and flora also contribute to the potamoplankton. In the still water of the bays an abundant animal plankton of rotifers and crustaceans was found, which reached the unusual volume of 112 c.c. per cubic meter of water.

C. A. K.

ZOÖLOGY.

New Edition of "Wilson's Cell." — The penalty that an author must pay for writing a successful text-book is that of revision, and this penalty has been conscientiously and fully met by Dr. Wilson[1] in the new edition of his text-book on the cell. The first edition was published in 1896 and contained 371 pages and 142 illustrations. The second edition, now before us, contains upwards of a hundred additional pages and nearly fifty new illustrations. Minor changes appear on almost every page, and some sections have been entirely recast. The more striking changes reflect the steady growth of cytological knowledge. Thus, the centrosome, which in the first edition was treated as a permanent organ of the cell, is, in view of the most recent work on both plants and animals, regarded now as of mixed character, in that it sometimes exhibits the peculiarities of a permanent organ by being inherited from cell to cell, and at other times is strictly temporary. The statements as to the finer structure of protoplasm have also been considerably modified. In the first edition Dr. Wilson favored the fibrillar theory, though without denying that other views might contain more or less truth. In the second edition the alveolar theory and even the granular theory have gained sufficiently to be fairly abreast their former rival. This change of

[1] Wilson, E. B. *The Cell in Development and Inheritance.* New York, The Macmillan Company, 1900. Second edition, xxi + 483 pp.

view is presumably largely due to Dr. Wilson's own work, and the opinion now expressed in his book is that the various types of structure assumed for protoplasm by different schools may in reality represent different phases in the functional activity of this substance. So thoroughgoing and complete has been the revision for the new edition that it will form an invaluable aid to every one interested in modern aspects of cytology.

P.

Intracellular Canals in Ganglion Cells. — The system of canals within the protoplasmic substance of ganglion cells, to which Holmgren has recently called attention, has been identified by Bethe[1] in the spinal ganglion cells of the rabbit. That these canals have a wall of their own as contrasted with the protoplasm of the cell in which they lie seems doubtful. They can be traced, however, beyond the limits of the cell, and in such regions show an undoubted wall; but this contains no nuclei, and hence its histological composition is in doubt. No connection between the canals and blood vessels could be demonstrated, the structures in this respect differing from the tubes discovered by Adamkiewicz. The physiological significance of these canals, whether they be lymph spaces or other such structures, is still to be ascertained.

P.

Vertebrate Anatomy. — Professor W. S. Miller[2] has edited and published under one cover four papers on vertebrate anatomy, the work having been done for the most part by students in his laboratory. The first deals with the histology of the lung of Necturus, the second with this animal's vascular system, and the third with its brain. These three contributions are simple descriptive statements of the more obvious facts that they have to deal with, and are not far-reaching in any direction. The fourth paper takes up the question as to whether there are preformed natural openings on the lining of the body cavity of the cat, a question which is answered in the negative. The papers on the whole are not of a high order, and, in fact, it is difficult to justify the publication of the first three. Nor is the editorial work well attended to, as the following sentence

[1] Bethe, A. Einige Bemerkungen über die "intracellulären Kanälchen" der Spinalganglienzellen und die Frage der Ganglienzellenfunction, *Anat. Anzeiger*, Bd. xvii (1900), pp. 304–309.

[2] Miller, W. S. Contributions from the Anatomical Laboratory of the University of Wisconsin, *Bull. Univ. Wis.*, Science Series, vol. ii (1900), pp. 199–245, Pls. III–XV.